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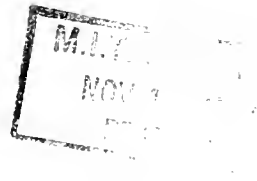

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Preliminary and Incomplete

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1. INTRODUCTION

Empirical studies in corporate finance find that seasoned common stock offering announcements are associated with a share price decline of approximately three percent.[1] Assuming market efficiency, this implies that stock issue announcements provide information on unexpected changes in firms' future prospects.

In this paper we seek to characterize the information conveyed by equity offering announcements. A fundamental premise of finance theory is that a firm's stock price is a function of the level and riskiness of its future cash flows. Since equity issues are associated with a reduction of a firm's share price, equity offering announcements indicate to the market either a reduction in the firm's expected future cash flow levels, or an increase in the riskiness of the future cash flows, or both.

For a sample of firms announcing seasoned equity offerings during the period 1966 to 1981, we investigate the nature of the information conveyed by the offering, using earnings and risk data subsequent to the equity

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[1] See Asquith and Mullins (1986), Hess and Frost (1982), Kolony and Suhler (1985), Korwar (1983), Logue and Jarrow (1978), Marsh (1979), Masulis and Korwar (1986), Masulis (1980), Mikkleson and Partch (1986), Smith (1977), and Schipper and Smith (1986). Smith (1986) summarizes the findings of these papers and concludes that on average the unexpected price change at the announcement of a common stock offering is approximately -3%.

announcements. Our tests indicate that firms that announce seasoned common stock offerings experience a significant increase in systematic risk subsequent to the offers. The average change in systematic risk in our sample is consistent with the magnitude of the stock price reaction to to the announcement. The results also indicate that there is no significant decline in earnings reported by the equity offering firms for at least five years after the offer announcement.

Our results are consistent with the hypothesis that firms issue common stock to reduce their leverage to a more prudent level when they expect their future cash flows to be riskier. The market interprets the offering announcements accordingly leading to a reduction in the equity values of the issuing firms. Our results also indicate that equity issues do not provide any information on the level of a firm's expected cash flows.

The rest of the paper is organized as follows. The next section discusses a number of hypotheses regarding the relation between equity announcements and stock prices. In section three we describe the data used in our empirical analysis. The tests and their results are discussed in section four. The conclusions are presented in section five.

2. EQUITY ISSUES AND STOCK PRICES

The effect of a firm's financing decisions on its stock price has been a subject of long standing debate in the finance literature. Financial theorists have questioned the validity of the practitioner view that selling equity causes a firm's stock price to fall because the demand curve

for shares of a firm is downward sloping. The theoretical literature in finance assumes that the demand curve for a firm's shares is essentially horizontal. The price of a security is determined solely by the expected level and riskiness of the cash flows associated with the security. Close substitutes for a firm's shares, that is securities with similar risk - return characteristics, are available in the capital markets. Thus, the price of a firm's shares is independent of the number of shares the firm or an outsider chooses to sell.

Modigliani and Miller (1958, 1963) show that in perfect capital markets with no taxes, the value of a firm is independent of its capital structure. In such a setting, increasing the leverage of a firm through a substitution of debt for equity will have no effect on the total value of the firm. If, on the other hand, interest is tax deductible and dividend payments are not tax deductible at the firm level, then debt is cheaper than equity for firms. Therefore, ignoring personal taxes, increasing the proportion of debt in a firm's capital structure increases the stock price of the firm due to the increased interest tax shield. However, as Miller (1977) points out, if personal tax is higher on bond interest than on equity income, the value of increased leverage to a firm's investors is less certain. Finally, increased leverage is likely to increase the probability of financial distress. The existence of bankruptcy costs decreases the value of leverage to a firm's share holders.

As the above discussion indicates, allowing for taxes and positive costs of financial distress, the optimal capital structure decision for a firm involves balancing the potential tax benefits from increased leverage

against the resulting potential financial distress costs. Firms that are reasonably sure that they can use the interest tax shields because they expect high and stable profits are likely to borrow more. Conversely, firms with high business risk and hence more volatile profits are less likely to borrow because the additional borrowing is likely to increase expected financial distress costs more than the expected tax benefits.

One implication of the above theory of capital structure is that a firm's financial leverage is determined by its managers' expectations of the level and riskiness of the firm's future earnings. If managers have superior information on the level or riskiness of future earnings, a decision to change capital structure will convey information to investors on managers' altered expectations. For example, a decision to issue additional equity indicates that the managers expect the firm's future earnings to be either lower or more volatile. Conversely, a decision to issue additional debt indicates that the firm's managers consider the potential tax benefits of debt to be higher than the increased costs of financial distress since future earnings are likely to be higher or more stable than previously anticipated.

The hypothesis that capital structure changes convey managers' superior information regarding a firm's future prospects has been posited by a number of researchers. Ross (1977), Miller and Rock (1985), Myers and Majluf (1984), and Gertner, Gibbons and Scharfstein (1987) present capital structure models that are consistent with this hypothesis. In this paper, we use earnings and risk measures subsequent to equity offerings to examine

whether convey information on changes in expectations of these variables. Specifically, we test two hypotheses:

H1: Equity offering announcements provide information on an unexpected increase in the riskiness of the offering firms' future earnings.

H2: Equity offering announcements provide information on an unexpected decrease in the level of the offering firms' future earnings.

Either or both of these hypotheses are consistent with the observed negative stock price reaction to equity offering announcements. The null hypothesis for both H1 and H2 is that equity offerings convey no information on a firm's future prospects. This null hypothesis is consistent with the downward sloping demand curve explanation for the negative stock price reaction to equity offering announcements. Rejection of the null hypothesis in favor of either H1 or H2 will increase our confidence that the downward sloping demand curve explanation is invalid.

3. DATA

Our equity issue sample comprises the industrial firms used by Asquith and Mullins (1986) in their study of the stock price effects of common stock offerings. Asquith and Mullins examine **Moody's Industrial Manuals** for the years 1963 to 1981 to select their initial sample of stock offerings. Offerings are included in the final sample if they meet the following requirements: (1) the firm was listed on the ASE or NYSE at the time of the offering; (2) the offering was public, underwritten and

registered with the SEC; (3) the offering was for common stock alone; (4) the firm had only one class of voting stock; and (5) the offering announcement was reported in the **Wall Street Journal**.

We impose the following additional requirements on our sample firms: (1) the equity offering is a primary offering by the firm - the entire proceeds of the offer are received by the firm;[2] (2) annual earnings per share before extraordinary items and discontinued operations for the offering firms are available on the 1984 **Compustat Annual Industrial and Research Tapes** or in **Moody's Industrial Manuals** for at least eight of the six years before, and five years after the common stock offering announcement; and (3) there are no prior stock offerings by the same firm within the previous five years. If there are multiple offerings within a period of five years, we include only the first offering in the sample.

The final sample comprises 94 primary common stock offerings from the period 1966 to 1981. Table 1 presents the distribution of these offerings by year. The most frequent years of offerings are 1980 (22%), 1981 (14%) and 1976 (11%). Since there is some evidence of clustering of issues over time, our tests attempt to control for industry- and time-related factors which may affect the performance of the offering firms.

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[2]Asquith and Mullins include in their sample secondary offerings and combinations of primary and secondary offerings. Secondary offerings are sales of common stock owned by existing stockholders and does not result in a cash inflow to the firm. We exclude these offerings from our sample because we are interested in analyzing the nature of the information conveyed by the financing decisions of firms.

Table 2 reports summary statistics on risk-adjusted returns at the common stock offering announcements. Risk-adjusted announcement returns are market model prediction errors for one day prior to and the day of the **Wall Street Journal** report on the offering. The market model parameters are estimated using returns in days +101 to +250 (where day 0 is the offer announcement date) and the CRSP equal-weighted market index.

The mean announcement return for the sample is -3.08%, significantly different from zero at the 1% level. The median announcement return is -2.8%, also significant at the 1% level. Eighty five per cent of the sample firms have negative announcement returns indicating that the mean return is not driven by a few large negative outliers. These announcement returns are similar to those reported in earlier studies: Smith (1986) summarizes this evidence and concludes that the average unexpected price change at the announcement of a common stock offering is about -3%.

Assuming market efficiency, the significant drop in a firm's stock price at the announcement of an equity offering indicates that the announcement conveys information to the market regarding the firm's future earnings or risk. The tests reported in the next section seek to provide evidence on the nature of the information conveyed by equity offerings.

4. EMPIRICAL TESTS AND RESULTS

4.1 Risk Changes Following Common Stock Offerings

Managers' decision to change the leverage of a firm might be induced by a perceived change in either the systematic or unsystematic risk. To test whether changes in the riskiness of a company's future earnings accompany equity offerings, we estimate both the systematic and unsystematic risk of equity prior and subsequent to the offer announcement.

4.1.1 Changes in Systematic Risk

We use the market model to estimate equity systematic risk (beta) prior and subsequent to the equity offers. For each offer firm, the beta for one year prior (year -1) and one year subsequent to the offer announcement (year 0) is estimated using daily stock returns and equal weighted market returns for days -350 to -101, and days +101 to +350 respectively. An earlier study by Asquith and Mullins finds that the firms in our sample experience significant positive excess returns prior to the offer announcement, indicating that our estimates of beta in year -1 may be biased downward. To examine this issue further, we also estimate beta for the offer firms for two and three years prior to the offer announcement (years -2 and -3), using returns for days -600 to -351 and -850 to -501 respectively.

For each offer firm, we compute t statistics to test whether there is a difference between estimates of alpha and beta in year 0 and the

estimates in years -3, -2 and -1. The sample distribution of estimated t statistics is used to test the significance of the differences. For each difference the following Z statistic is computed:

$$Z = 1/\sqrt{N} \sum_{j=1}^{N} t_j/\sqrt{k_j/(k_j-2)}$$

where, t_j = t statistic for firm j associated with the estimated difference in parameters (α or β) one year after and T years before the equity offering. T = 1,...3;

k_j = degrees of freedom for firm j; and

N = number of firms in the sample.

The t statistic for firm j is distributed Student t with variance $k_j/(k_j-2)$. Under the Central Limit Theorem, the sum of the standardized t statistics is normally distributed with a variance of N. The Z statistic in equation (1) for each parameter difference is therefore a standard normal variate under the null hypothesis that the difference in the parameter (alpha or beta) one year after and T years before the equity offer is significantly different from zero.[3]

Summary statistics for beta estimates of the sample firms, and differences between estimates before and after the offer announcement are reported in Table 3, Panel A. The mean estimates of beta are 1.254, 1.234, 1.229, and 1.332 in years -3, -2, -1, and 0 respectively. The median

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[3]The test is based on the sample distribution of the parameter differences. It assumes that the parameter differences are independent across firms in the sample.

estimates of beta in these years are 1.210, 1.105, 1.152, and 1.322 respectively.

The mean differences between beta estimates for year 0 and years -2, -1 are positive and significant at the one percent level; the mean difference in beta for years 0 and -3 is significant at the ten percent level. Thus there is evidence that the systematic risk of the equity offering firms increases in the year subsequent to the equity offer. This change is not due to non-stationarity of the beta estimates since the mean differences in estimates for years -3, -2, and -1 are not significantly different from each other.

The above findings indicate that equity betas increase subsequent to a primary equity offering. The economic significance of the magnitude of the beta increases documented above can be assessed using a simple valuation model. Between years -1 and 0 the mean beta for our sample of equity offering firms increases from 1.229 to 1.332. Assuming constant cash flows till perpetuity, a market risk premium of 8%, and a risk-free rate of 5%, such an increase in a firm's equity beta will lead to a 5.6% decline in stock price.[4] The stock price decline ranges from 4% to 7.8% as the assumed risk-free rate is allowed to vary from 10% to 0%. Thus, on average, the observed change in the betas of our sample firms are generally

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[4] Ibbotson and Sinquifield (1982) report that the average annual risk premium on common stocks (versus return from treasury bills) during 1926 - 1981 was 8.3%. Average annual return on treasury bills during this period was 3.1%.

consistent with the magnitude of the stock price reaction to equity offerings.[5]

Also reported in Table 3 (Panel B) are the estimates of alpha for the equity sample firms in years -3, -2, -1 and 0. The mean estimates of alpha for years -3, -2, 0 are not significantly different from zero. In year -1, the mean alpha is 0.0004 which is statistically significant. This finding is consistent with the results of earlier studies which report that equity offering firms experience significant positive excess returns prior to the offer announcement.

As mentioned earlier, the positive excess returns prior to the offer announcement may cause the estimate of offering firms' beta in year -1 to be biased downward. However, this bias, if any, does not appear to explain the reported increase in beta in year 0. This is because the beta in year 0 is significantly larger relative to the value not only in year -1 but also years -3 and -2 when the estimates of alpha are not significant.

In summary, the results indicate that equity offering firms experience a significant increase in their systematic risk after the offer announcement. The magnitude of the risk increase, on average, is consistent with that implied by the magnitude of stock price decline at the offer announcement. These findings are contrary to implications of

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[5]We also estimate the valuation effec of risk changes for each of the sample firm seperately using the above model. The mean and median implied price declines are comparable to those reported above.

classical capital structure theory, where there is no information asymmetry between managers and investors. Assuming that the cash raised by an equity offer is invested in scale expanding projects, this model predicts that the firm's equity beta will decline subsequent to the offer since financial leverage has decreased. Our results indicate that a stock issue reveals managers' superior information on an increase in the firm's systematic risk which is not fully offset by the decline in leverage.

4.1.2. Changes in Unsystematic Risk

To examine whether there are significant changes in the unsystematic risk of equity offering firms we examine the variance of the market model residuals in years -3, -2, -1 and 0. The market model for each firm in each of these years is estimated as described above and the variance of the residuals in each of the years is computed.

Summary statistics for estimates of the market model residual variances of the sample firms in years -3, -2, -1 and 0 are reported in Panel C of Table 3. The mean residual variance is 0.00051 in years -3, -1 and 0 and 0.00054 in year -2. The median residual variance is 0.0004 in all the four years. There is no significant difference between the sample distribution of residual variance across years.[6] The evidence therefore

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[6]We checked the validity of this statement using appropriate statistical tests. We do not report the statistical tests in the paper because we consider them superfluous: as the mean and median values indicate, the estimated residual variances for each firm are virtually identical across years.

indicates that the equity offering firms do not experience a change in their unsystematic risk subsequent to an equity offer.

In conclusion, the tests reported in this section indicate that the equity offering firms experience a significant increase in their risk subsequent to the offer announcement. This increase in risk arises from an increase in the firms' systematic risk; the unsystematic risk of the offering firm remains unchanged. The average increase in risk is consistent with the magnitude of the average stock price decline at the equity offer announcement. This evidence supports the hypothesis that the announcement of an equity offer leads to an increase in the market's expectation of the offering firm's risk.

4.2 Earnings Performance Subsequent to Equity Offerings

To examine whether there are systematic unexpected earnings declines exhibited by firms that make common stock offerings, we estimate earnings forecast errors for five years subsequent to the offer announcement (years 0 to 4). We use accounting earnings as a measure of the offering firms' economic earnings.[7] Earnings forecasts are formed using information available in year -1, the year prior to the common stock offering.[8]

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[7]A number of accounting studies find that unexpected accounting earnings are related to economic earnings, reflected by unexpected equity returns. See Watts and Zimmerman (1986) for a summary of these studies.

[8]The median number of trading days between the equity offer announcement and the first subsequent earnings announcement is 136 days. Since we

(Footnote Continued)

$E_{-1(Atj)}$), t=0,...4, is the market's forecast of earnings in fiscal year t for firm j given annual earnings information available at year -1. Since studies by Ball and Brown (1968), Ball and Watts (1972), and Watts and Leftwich (1977) suggest that annual earnings follow a random walk, we use a random walk model to proxy for the market's earnings expectations. Thus forecasted earnings per share for years 0 to 4, given information available in year -1, are the actual earnings per share in year -1:

$$E_{-1}(A_{tj}) = A_{-1j}, \quad t=0,..,4 \qquad (2)$$

where A_{-1j} is the actual earnings per share of firm j in year -1.

The forecast error for year t is the difference between actual earnings per share in year t (A_{tj}) and expected earnings per share in year t given information in year -1 ($E_{-1}(A_{tj})$). To aggregate results across firms, we standardize forecast errors of earnings per share for each firm in years 0 to 4 by its stock price two days before the announcement of the common stock offering, P_j. The standardized forecast errors are therefore defined as:

(Footnote Continued)
define year 0 as the fiscal year in which the offer announcement is made, part of year 0 consists of fiscal quarters before the announcement. Thus the earnings in year 0 do not relate strictly to the time period after the offer announcement. In the next draft of the paper, we propose to remedy this situation by defining year 0 as the four fiscal quarters after the offer announcement and year -1 as the four fiscal quarter before that date and employing quarterly earnings data in the analysis presented in this section.

$$SFE_{tj} = (A_{tj} - A_{-1j})/P_j, \quad t=0,..4 \quad (3)$$

There are two potential sources of bias that arise from the above method of computing standardized earnings forecast errors. First, since an equity offering is usually preceded by a run up in the offering firm's stock price, standardization of forecast errors by the stock price two days before the offer announcement could potentially bias forecast errors downward. To assess the sensitivity of the results to this method of standardization, we employ an alternative standardization procedure. We repeat the analysis using forecast errors standardized by the stock price at the beginning of the fiscal year in which the equity offer is announced and the results are very similar to those reported here.

A second potential source of bias can arise from using earnings per share rather than total earnings. If the cash proceeds of the stock issue are invested in projects with earnings payoffs beyond our five year forecasting horizon, earnings per share in years 0 to 4 are likely to decline, since the increase in the number of shares may not be offset by a corresponding increase in earnings. Once again, we check the sensitivity of our results to this bias by repeating the analysis by using restated earnings per share data for years 0 to 4 based on the pre-offer number of share. The results, once again, remain unchanged from those reported here.[9]

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[9]The two source of biases identified here introduce a downward bias in the forecast errors in years 0 to 4 thereby increasing the finding evidence in

(Footnote Continued)

Standardized earnings forecast errors defined in equation (3) are computed for years 0 to 4 for each of the equity offering firms. To assess the effect of clustering of equity offers over time, we also estimate industry earnings forecast errors for these same fiscal years. For each test firm, earnings forecast errors are estimated for other firms that have (a) the same four digit SIC code on **Standard and Poor's Compustat Industrial and Research** tapes; and (b) earnings data available for eight of the six years before and the five years after the offer announcement. The forecast errors for each comparison firm are standardized by its stock price two days prior to the test firm's offer announcement and industry median earnings forecast errors are constructed for years 0 to 4.

If equity issues convey information to the market on the offering firms' future earnings levels, the standardized forecast errors of the offering firms will be negative and lower than the forecast errors for other firms in their industries. We test this proposition by estimating mean and median standardized earnings forecast errors for the offering firms, and mean and median differences in standardized forecast errors for the offering firms and their industry medians. Student t and Wilcoxon Signed Rank tests are used to assess the statistical significance of the mean and median values respectively. These results are reported in Table 4.

(Footnote Continued)
favor of the hypothesis that equity offers are followed by unexpected earnings declines. However, as the subsequent discussion in this section shows, our results do not support this hypothesis despite these biases.

As shown in Panel A of Table 4, the mean standardized earnings forecast errors for the equity issue sample are 1.69% ($p = 0.01$), 1.59% ($p = 0.03$), and 2.79% ($p = 0.01$) respectively in years 0, 1 and 2. The mean standardized earnings forecast errors are not significant at the five percent level in years 3 and 4. The median standardized earnings forecast errors are positive and significant at the one percent level in all five years. These results indicate that the equity offering firms have better than expected earnings levels in years 0 to 2 and possibly in years 3 and 4 as well.

Panel B of Table 4 reports statistics on the difference in forecast errors for the equity issue firms and median forecast errors for other firms in their industries. The mean differences between the equity issue firms and their industries is not significantly different from zero at the five percent level in any of years 0 to 4. The median differences are insignificant in years 0,1 and 2 and positive in years 3 and 4, indicating that that the equity issue firms perform better than their industries in these years.

In summary, the earnings forecast errors of the equity issue sample are inconsistent with the hypothesis that the equity offers convey negative information regarding the earnings levels in years subsequent to the offer announcements. Therefore, the negative market reaction to equity offers

cannot be attributed to a downward revision in the market's expectation of the offering firms' future earnings levels.[10]

5. SUMMARY AND DISCUSSION

Previous studies report significant stock price declines for firms that announce common stock offerings. This paper examines whether there are significant changes in equity offering firms' risk and/or earnings levels subsequent to the offer announcements which are consistent with the stock price decline at the announcement date.

We examine a sample of 94 equity offerings from the period 1966 to 1981. Our tests lead to two conclusions. First, firms that announce common stock offerings have significant increases in equity betas subsequent to the offer announcement. On average, the magnitude of the increase in systematic risk is consistent with that implied magnitude of the stock price declines at the equity offer announcement. The

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[10] One caveat to this interpretation should be mentioned. As noted above, the test firms experience an increase in price prior to the issue, indicating that the market expects these firms' future earnings to increase. If the equity offering announcement reduce its expecations of these increases, our tests may not detect the revision in earnings expectations. One way to examine this possibility is to compare changes in alalysts' earnings forecasts, or forecast errors, around the equity offer announcements. We plan to exptent our analysis to analysts' forecasts. However, such an extension is unlikely to change the basic result reported in this paper as indicated by Jain (1987).

unsystematic risk of offering firms remains unchanged subsequent to the offer.

A second conclusion is that equity offering firms do not experience unexpected earnings declines subsequent to the offers. In fact, equity offering firms, as well as their, industries appear to experience an unexpected earnings increase in the years subsequent to the offer.

The results reported in this paper help characterize the nature of the information conveyed by the equity offering decisions of firms: they suggest that the stock price decline experienced by the equity offering firms is due to a revision in the market's expectation of the offering firm's future risk and not their future earnings levels. Managers appear to announce an equity offering and there by decrease their firm's financial leverage when they believe that the firm's future earnings are expected to be riskier. The results are inconsistent with the view that the price decline at the offer announcement is solely due to an increase in the supply of the offering firm's shares.

The current asymmetric models of firms' financial decisions are general in nature and do not explicitly distinguish between the various types of information conveyed by different financial decisions.[11] The empirical results in this paper and the papers which examine other

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[11]For example, Miller and Rock (1985) treat equity offerings as negative dividend decisions and employ the same model to explain the market reaction to the two decisions.

financial decisions indicate that there is a need to refine these models further. For example, the papers that examine the market reaction to dividend policy changes (Healy and Palepu (1987), and Offer and Siegel (1986)) indicate that dividend decisions convey information regarding future earnings levels. In contrast, the results of this paper indicate that equity offerings convey information on future risk, and not earnings levels. Thus, while the magnitude of the market reaction to dividend changes and equity offerings are similar, the nature of the information that the market infers from these decisions appears to be dissimilar. This points to an opportunity to further refine the current asymmetric models by explicitly modeling the nature of the information underlying these decisions.

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Table 1

Distribution of primary stock offerings by year in the period 1966 to 1981 for 94 firms[a]

Year	N	Percent of total sample
1966	2	2.1
1967	1	1.1
1968	3	3.2
1969	4	4.3
1970	7	7.4
1971	8	8.5
1972	3	3.2
1973	1	1.1
1974	1	1.1
1975	8	8.5
1976	10	10.6
1977	1	1.1
1978	5	5.3
1979	6	6.4
1980	21	22.3
1981	13	13.8
Total	94	100.0

[a] To be included in the sample, a firm has to: (1) make a public offering of new shares that is underwritten and registered with the SEC; (2) be listed on the ASE or NYSE at the time of the offering; (3) have only one class of voting stock; (4) have no other primary offerings in the previous five years; (5) have the primary offering announcement date available in the *Wall Street Journal*; (6) have stock price and return data available for the announcement date and two days prior to the event; (7) have a *Wall Street Journal* earnings announcement date for the year preceding the event; and (8) have annual earnings per share before extraordinary items and discontinued operations available on Compustat for at least eight of the six years before, and the five years after the event date.

Table 2

Risk-adjusted announcement day returns for 94 firms
that announce primary stock offerings in the period 1966-1981[a]

Mean	-3.08%
Student t probability	0.01
Median	-2.80%
Wilcoxon probability	0.01
Percent negative	84.8%

[a] Risk-adjusted returns are cumulative returns for one day prior to and the day of the *Wall Street Journal* announcement of the offering (days -1 and 0 respectively) with market model parameters estimated using returns for days 60 to 250.

Table 3

Summary statistics on market model parameters for years surrounding primary equity offer announcements[a,b]

	Year relative to offer announcement			
	-3	-2	-1	0
Panel A: Estimates of β				
Mean	1.25	1.23	1.23	1.33
Z statistic	59.25[c]	68.80[c]	76.79[c]	81.72[c]
Median	1.21	1.11	1.15	1.32
Mean $(\beta_0 - \beta_t)$	0.08	0.10	0.10	
Z statistic	1.85	3.14[c]	4.93[c]	
Panel B: Estimates of α				
Mean	-0.0002	0.0002	0.0004	-0.0005
Z statistic	-1.49	1.26	3.15[c]	-1.58
Median	-0.0003	0.0001	0.0003	-0.0007
Panel C: Estimates of σ^2				
Mean	0.0005	0.0005	0.0005	0.0005
Median	0.0004	0.0004	0.0004	0.0004

[a] Market model parameters are estimated using daily stock returns and equal-weighted market returns for days -850 to -601 (year -3), -600 to -351 (year -2), -350 to -101 (year -1), and +101 to +350 (year 0), where day 0 is the offer announcement date.

[b] The sample comprises 94 firms that announce primary equity offerings in the period 1966-1981.

[c] Significant at the one percent level using a two-tailed test.

Table 4

Summary statistics on earnings per share forecast errors as a percentage of initial equity price for years surrounding announcements of primary equity offerings[a,b]

Period relative to stock split		N	Mean	Student t probability[c]	Median	Wilcoxon probability[c]
Panel A: Equity issue sample						
Year	0	92	1.69%	0.01	1.43%	0.01
	1	92	1.59	0.03	2.01	0.01
	2	92	2.79	0.01	2.32	0.01
	3	90	1.93	0.13	3.18	0.01
	4	87	0.63	0.76	3.04	0.01
Panel B: Difference between equity issue and industry comparison samples[a]						
Year	0	92	0.53%	0.32	0.33	0.24
	1	92	-0.22	0.75	0.06	0.68
	2	92	1.59	0.10	0.22	0.26
	3	90	2.41	0.10	1.16	0.04
	4	87	1.74	0.40	2.55	0.02

[a] Earnings forecast errors are estimated given the earnings history available prior to the equity announcement using a random walk model. The forecast errors are standardized by the firm's stock price two days prior to the announcement of the equity offering by the test firms. Industry median standardized earnings forecast errors are estimated for all firms (otherthan the issue firm) with the same four digit SIC code as the equity offering firm.

[b] The equity offering sample comprises 94 firms that announce primary offerings in the period 1966-1981. Results are available for only 92 of these firms due to missing equity prices.

[c] Probability levels are for two-tailed tests of significance.

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